



HEGGEL®

You Build, We Protect!

NEWSLETTER

HEGGEL® UltraTile

January 2024



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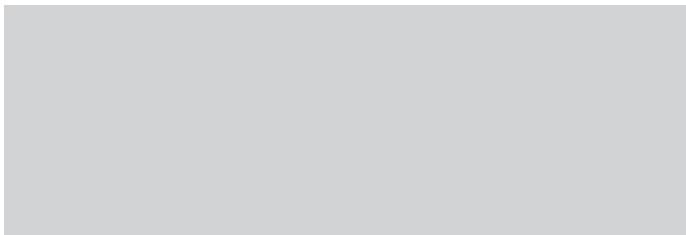


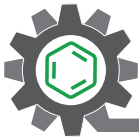
Reliable Acid-Resistant Tiles for Industrial Corrosion Protection

Acid-Resistant Tiles are specialized building materials used extensively in heavy industries, particularly in environments where corrosive substances such as acids, chemicals, and high temperatures are present. These materials are designed to withstand the harsh conditions found in industries like chemical processing, petrochemical, pharmaceutical, and metal manufacturing.

Acid-resistant tiles are typically made from high-quality ceramics like porcelain or vitrified clay, which are coated with a dense layer of acid-resistant glaze. This glaze in conventional acid-resistant tiles provides a barrier that protects the underlying tile material from chemical attacks, making them impervious to the corrosive effects of acids.

Unglazed Acid-Resistant Tiles, on the other hand, offer a distinct advantage in industrial settings exposed to harsh and corrosive conditions. Their innate resilience, stemming from the absence of a protective glaze, makes them an ideal choice for environments where chemical exposure is a constant threat. These tiles, typically crafted from dense and chemically inert materials, possess exceptional resistance to a wide spectrum of acids and corrosive substances. Their durability and rugged nature enable them to withstand abrasive conditions, heavy vehicle traffic, and even extreme temperature fluctuations without succumbing to damage. Furthermore, unglazed acid-resistant tiles have the added benefit of an extended lifespan, as they do not rely on a glaze that can wear off over time. Their porous surface, though it may require vigilant maintenance in some cases, further contributes to their effectiveness by absorbing and resisting the corrosive elements, making them a top choice for industrial applications where long-lasting protection against chemical erosion is paramount.





Protecting Industry Across the Spectrum

Acid-resistant tiles have diverse applications in heavy industries. These tiles are crucial in safeguarding infrastructure and equipment in environments where corrosive substances and acids are present, ensuring long-term durability and safety across numerous industrial sectors, including:

Chemical Manufacturing where the production of acids, corrosive chemicals, and solvents is commonplace. They line reactor vessels, floors and equipment to protect against chemical corrosion.

Oil and Gas Sector, in refineries, petrochemical plants, and offshore platforms to ensure long-lasting protection in environments where acids and aggressive chemicals are prevalent. These tiles contribute significantly to the durability and safety of oil and gas facilities.

Mining and Metallurgy that acid-resistant tiles are utilized to line furnaces, smelting chambers, and chemical treatment units, withstanding the harsh conditions associated with ore extraction, metal refining, and alloy production.

Power Plants, especially those with coal or biomass combustion, producing acidic by-products like sulfur dioxide. Here, acid-resistant

tiles are installed in various critical areas, including the Water Treatment Plant (WTP) and flue gas desulfurization systems, to mitigate corrosion and ensure efficient operation.

Wastewater Treatment Plants and Industrial Wastewater Facilities to line tanks, channels, and infrastructure components involved in the treatment of acidic effluents and chemical processes.

Food and Beverage Processing, the dairy industry, as well as Clean-in-Place (CIP) systems, in areas prone to exposure to acidic substances like vinegar, citric acid, or cleaning agents, to maintain hygienic and corrosion-resistant surfaces.

Textile and paper manufacturing processes that often involve the use of chemicals that can be corrosive. Acid-resistant tiles are utilized to protect equipment, vats, and storage areas in these industries.

Automotive Manufacturing particularly in battery manufacturing and electroplating processes, where acids and chemicals are used for various production steps.

Research and testing laboratories in diverse fields to ensure the safety of researchers and the durability of laboratory infrastructure.



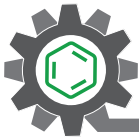


Predominant Technical Features in Acid-Resistant Tiles



Industrial Acid-Resistant Tiles boast several key technical features that make them vital for securing infrastructure in corrosive environments. Meanwhile, a select group of technical features holds a position of paramount importance, taking precedence over others due to their critical roles in ensuring the longevity and reliability of these specialized tiles. These critical characteristics act as the primary defence mechanisms against the persistent corrosive challenges found in diverse industrial settings. Understanding the importance of these key features is crucial for those looking to make informed decisions when choosing acid-resistant tiles that will reliably protect against corrosive challenges.

Water Absorption is a fundamental technical feature that significantly influences the performance of acid-resistant tiles. In the context of these tiles, low water absorption is paramount. Tiles with minimal water absorption rates are less susceptible to absorbing corrosive liquids, which is crucial for preventing the infiltration of acids and chemicals into the tile structure. This attribute acts as a formidable barrier, safeguarding the underlying substrate from the damaging effects of chemical corrosion. In applications where exposure to water or acidic solutions is frequent, such as chemical processing plants or wastewater treatment facilities, the low water absorption characteristic takes precedence. It ensures not only the long-term integrity of the tiles but also minimizes the risk of staining and surface degradation caused by corrosive substances.



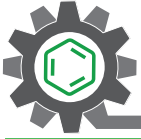
Porosity Measures the degree of open spaces or voids within the tile's composition. For acid-resistant tiles, low porosity is of great importance. A tile with low porosity is denser and less permeable, which reduces the potential for chemical penetration, corrosion, and staining; acting as an impenetrable shield against the intrusion of corrosive substances. This attribute is especially critical in industries where aggressive acids are commonplace, such as chemical manufacturing. In such environments, tiles with low porosity are preferred to ensure long-term protection against chemical erosion, thereby preserving the infrastructure's integrity and safety.

The Resistance of Acid-Resistant Tiles to Acid Solubility is a vital technical feature that underlines their effectiveness in corrosive environments. High resistance to acid solubility secures that the tiles can withstand direct contact with corrosive acids and chemicals without deteriorating or breaking down. This attribute is crucial in applications where exposure to highly corrosive acids is a constant concern. For example, in industries dealing with strong acids like sulfuric acid or hydrochloric acid, acid-resistant tiles with exceptional acid solubility resistance are essential to maintain long-term durability and safety. This characteristic guarantees that the tiles remain stable and continue to provide reliable protection against chemical erosion.

Cold Crush Strength assesses a tile's ability to withstand mechanical forces, such as compression, at room temperature. While not directly related to chemical resistance, it is vital for ensuring that acid-resistant tiles uphold their structural integrity under various mechanical stresses. In many industrial settings, especially those involving heavy equipment, traffic, or other mechanical loads, this technical feature holds precedence alongside chemical resistance. For instance, in chemical processing plants where equipment and machinery are placed directly on the tiles, a high cold crush strength is essential. It ensures that the tiles can endure both the chemical and mechanical stresses encountered in these demanding environments.

HEGSEL UltraTile stands out as a top-quality acid-resistant tile, thanks to its exceptional technical features. It boasts a remarkably low water absorption rate, ensuring outstanding durability even in tough conditions. Additionally, it offers superior resistance to acid solubility, providing durable protection against chemical damage. Its excellent porosity measures create an effective barrier, preventing harsh chemicals from seeping into underlying surfaces. Furthermore, its impressive cold crush strength makes it the ideal choice for industries needing reliable acid-resistant tiles that can handle heavy loads and mechanical stress.

HEGSEL UltraTile exemplifies the excellence of high-quality acid-resistant tiles, offering the optimal solution for industries that prioritize acid resistance and long-term durability.



Unglazed, Industrial Acid Resistant Ceramic Tile

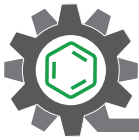
HEGSEL UltraTile is a high-performance flooring and equipment solution designed to excel in demanding industrial environments across a wide range of industries, including chemical, petrochemical, steel/copper plants, power plants, fertilizer, pharmaceuticals, pulp, and paper. This advanced product boasts an impressive array of technical features that set it apart from conventional acid-resistant tiles on the market.

HEGSEL UltraTile exhibits remarkable water absorption and acid solubility resistance, making it ideal for areas prone to spills and chemical exposure. Its low water absorption rate ensures that it will not deteriorate or become compromised when exposed to liquids, providing long-lasting durability and peace of mind in even the harshest environments.

One of the standout features of **HEGSEL UltraTile** is its exceptional low porosity, which plays a pivotal role in its performance. This low porosity not only enhances its resistance to water absorption and acid solubility but also adds an extra layer of protection. It acts as a barrier, preventing the penetration of harsh chemicals into the substrates beneath the tiles when the surface is exposed to corrosive media. This added defense mechanism ensures that your infrastructure remains safeguarded even when facing the most corrosive substances.

Moreover, **HEGSEL UltraTile** remarkable cold crush strength is equally crucial. It empowers the product to withstand heavy loads and the demanding conditions of industrial equipment. This means that your machinery can be confidently supported by **HEGSEL UltraTile** without the risk of cracking or breaking, guaranteeing the long-term integrity and reliability of your flooring and equipment surfaces. In essence, **HEGSEL UltraTile** offers an exceptional combination of low porosity and cold crush strength, providing a robust defense against both chemical corrosion and mechanical stress.





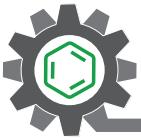
HEGSEL UltraTile boasts enhanced mechanical features, including impressive tensile strength, exceptional flexural strength, and robust overall mechanical integrity. These qualities make it a reliable choice for applications demanding resilience and durability in the face of mechanical stress and load-bearing requirements.

HEGSEL UltraTile outperforms traditional acid-resistant tiles in its resistance to both low and high concentrations of acids and alkaline substances. This resistance is crucial in industries where chemical spills and exposure are common, as it minimizes maintenance requirements and extends the lifespan of the product.

In demanding industrial environments, abrasion resistance is paramount. **HEGSEL UltraTile** excels in this regard, ensuring that your floors and equipment surfaces remain intact and functional even in high-traffic areas. Additionally, its impressive modulus of rupture means it can withstand mechanical stress, further enhancing its durability.

HEGSEL UltraTile stands as the superior solution for industries seeking unmatched performance and resilience in their flooring and equipment needs. **HEGSEL UltraTile** ensures reduced maintenance and an extended product lifespan, elevating your industrial infrastructure where excellence is not just a choice but a standard.





Explore the detailed technical features in the tables below to witness how **HEGGEL UltraTile** can revolutionize your industrial space.

Technical Data	Value	Unit
Chemical Composition	Al ₂ O ₃ 20-25 TiO ₂ 1.2-1.5 Fe ₂ O ₃ < 1.2	%
Water Absorption EN ISO 10545-3	< 0.9	%
Cold Crushing Strength EN 993-5	250	N/mm ²
Resistance to Low Concentrations of Acids and Alkaline EN ISO 10545-13	ULA	–
Resistance to High Concentrations of Acids and Alkaline EN ISO 10545-13	UHA	–
Abrasion Resistance EN ISO 10545-6 (ugl) EN ISO 10545-7 (gl)	< 275	mm ³
Modulus of Rupture EN ISO 10545-4	> 40	N/mm ²
Acid Solubility DIN EN 993-16	0.9-1.2	Gew. %
Apparent Porosity EN ISO 10545-3	0.7-1.1	%