



You Build, We Protect!

NEWSLETTER

HEGGEL® Tile Lining Systems

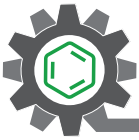
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Mortar Systems for
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◆ The Critical Role of Tile and Mortar Lining Systems

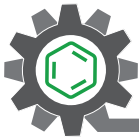
Superior Corrosion Resistance and Mechanical Durability

Tile and mortar systems find widespread application in heavy industrial settings, such as within the oil and gas, chemical processing, petrochemical, pharmaceutical, mining, metallurgy, power generation, wastewater treatment, and food and beverage industries. These systems are crucial for protecting various components such as storage tanks, reactors, and flooring in various industrial plants; for instance, in offshore drilling platforms, tile and mortar systems safeguard against the relentless corrosive action of seawater and chemical exposure. Refineries and petrochemical plants benefit from these systems in areas where acidic and caustic substances are handled, ensuring that the underlying structures remain intact and operational. Additionally, they are employed in the construction of secondary containment areas, providing an extra layer of protection against potential spills and leaks.

Tile and mortar systems not only offer exceptional corrosion resistance but also provide significant mechanical strength. This robust lining system can withstand heavy mechanical loads, abrasive conditions, and thermal stresses commonly encountered in industrial environments. This more specifically means that equipment and infrastructure are protected not just from chemical attacks, but also from the deteriorating effects of physical wear and the destructive impacts of mechanical loads. The enhanced mechanical strength ensures that surfaces maintain their integrity under heavy use, reducing the risk of structural failures and extending the service life of critical components.

This dual protection—against both corrosion and mechanical damage—makes tile and mortar systems an ideal solution for safeguarding industrial assets.





Multi-Layer Composition of Tile and Mortar Lining Systems

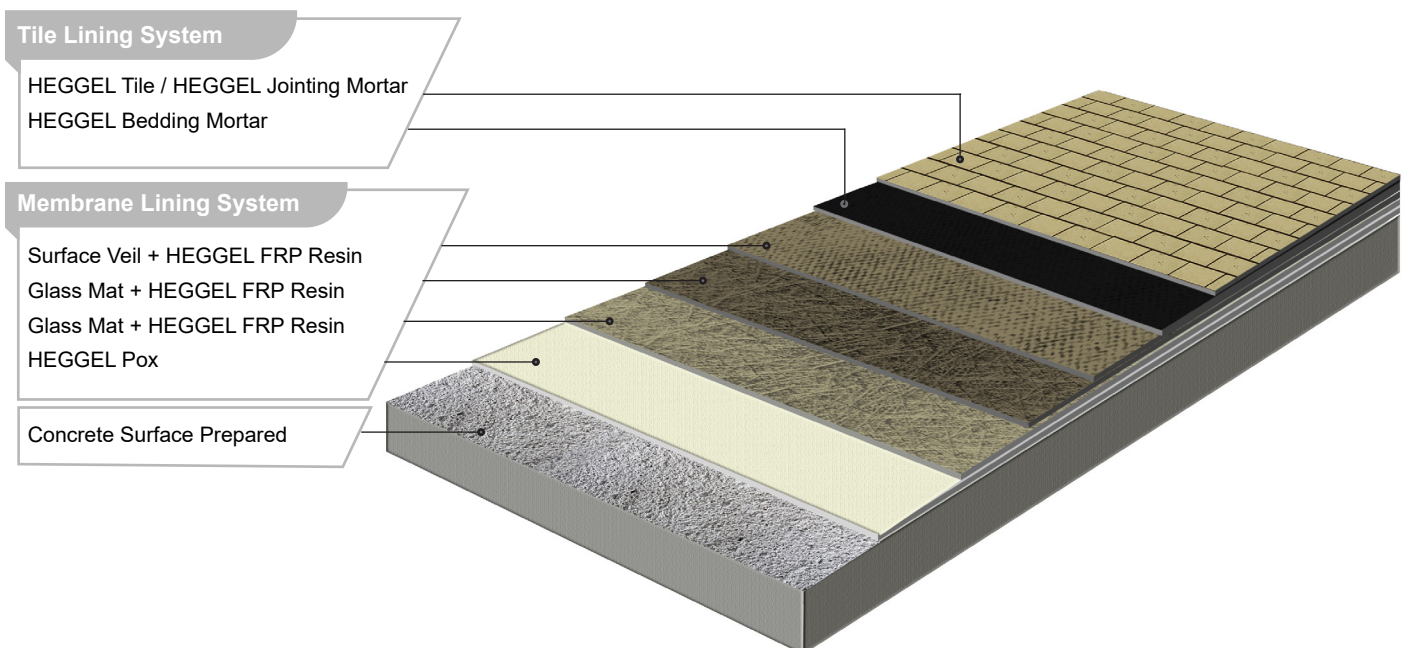
Tile and mortar lining systems feature a meticulously engineered multi-layered structure designed for maximum durability and protection. Typically, these systems begin with a primer layer that ensures optimal adhesion to the substrate, sealing any micro-cracks or pores. A crucial component, the membrane layer made of laminate or Fiber Reinforced Plastic (FRP) systems, is then installed. This membrane layer, positioned beneath the mortar, offers exceptional chemical resistance and flexibility, effectively preventing the penetration of corrosive substances. It is implemented as the final protective layer in the structure.

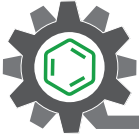
On top of the membrane layer, a thick mortar layer is applied. Being used for bedding and jointing the tiles on top, this mortar is composed of a mixture of resins, fillers, and hardeners

that contribute to its robustness and resilience against chemical, mechanical and thermal stresses.

The final layer consists of ceramic or acid-resistant high-density tiles, and, depending on additional mechanical requirements, acid-resistant bricks. These are securely embedded in the mortar, followed by a sealing application of jointing mortar. These tiles form a hard, impermeable surface that directly interfaces with the harsh industrial environment.

The multi-layered approach ensures that each component works in synergy to provide comprehensive protection, significantly enhancing the system's overall durability and effectiveness against corrosion and physical damage.



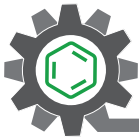


Advantages of the Layered Structure for Corrosion

The layered structure of tile and mortar lining systems offers several significant advantages for corrosion protection. Firstly, the base layer adheres strongly to the substrate, sealing any micro-cracks or pores that could allow corrosive agents to penetrate. The thick mortar layer acts as a secondary barrier, absorbing mechanical impacts and providing a substantial buffer against chemical attacks. The ceramic tiles, being highly resistant to chemical and thermal degradation, form the outermost defense, directly blocking corrosive substances.

This multi-layered configuration distributes stress across different layers, preventing localized failures and enhancing overall durability. Moreover, the redundancy built into this system means that even if one layer is compromised, the others continue to provide protection, significantly extending the service life of the protected equipment and infrastructure. This comprehensive defense mechanism makes tile and mortar linings exceptionally effective in combating corrosion in demanding industrial settings.





◆ Membrane Layers: Reinforcing Tile Lining Defense

Membrane layers are key to enhancing the chemical resistance and corrosion protection of tile lining systems. Acting as a robust barrier, they block harmful substances from penetrating the surface, making them indispensable in harsh chemical environments.

In the event of cracks forming in the tile and mortar lining system, corrosive substances may seep through these fissures. However, the presence of a membrane barrier beneath the tiles intercepts these substances, preventing them from reaching the underlying structure and causing further damage. This secondary line of defence ensures the integrity of the overall system, even if the outermost layers are compromised.

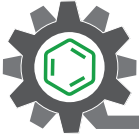
The number of layers in laminate systems, can be tailored to meet specific process conditions. These composite systems are constructed

using glass mat reinforced structures, combined with various chemically-resistant resins. The selection of resin type is dictated by the operational environment, ensuring optimal performance under different chemical exposures and thermal conditions.

Customizing the composition and thickness of membrane layers according to the process requirements enhances the durability and longevity of the tile lining system. By integrating these robust membranes, industries can significantly improve their corrosion protection strategies, ensuring long-term reliability and reducing maintenance costs.

This sophisticated approach, combining tile, mortar, and membrane layers, exemplifies a comprehensive method for safeguarding industrial equipment and infrastructure against the detrimental effects of corrosion.





HEGGEL Tile Lining Systems

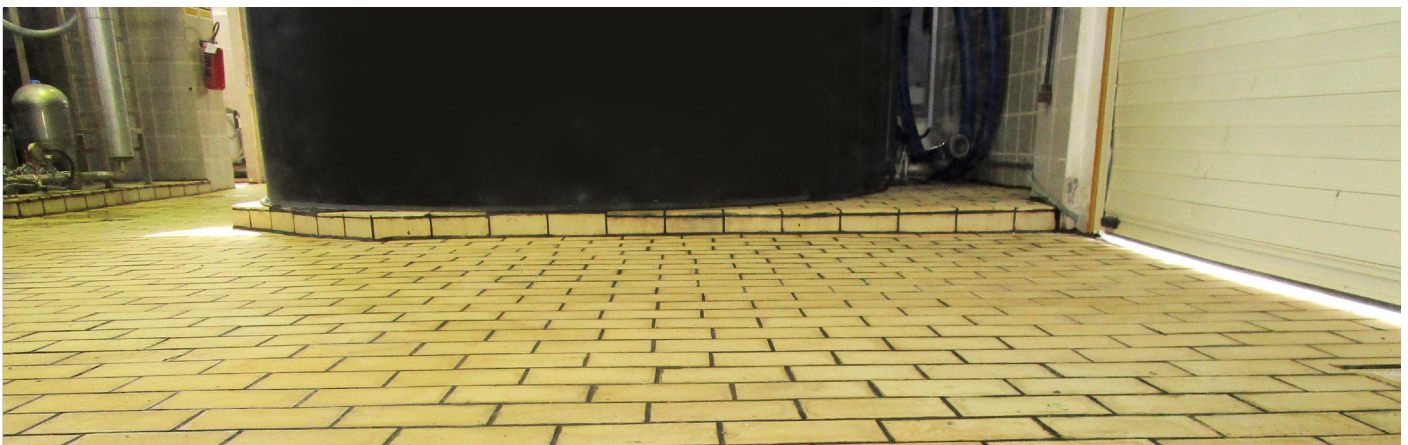
HEGGEL Tile Lining Systems offer exceptional protection and durability for industrial environments. These systems are specifically designed to withstand harsh chemical and mechanical conditions, ensuring long-term reliability. The combination of **HEGGEL Tiles**, with specialized **HEGGEL Mortars**, and **HEGGEL FRP** systems creates a robust barrier against corrosion, making them ideal for industries such as chemical processing, petrochemicals, and wastewater treatment.

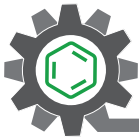
Hexagon icon The Superior Chemical Resistance of HEGGEL Tile

HEGGEL Tile is renowned for its high chemical resistance. Made from high-quality ceramics and coated with a dense layer of acid-resistant glaze, these tiles provide an impermeable shield against corrosive substances. This makes them particularly effective in environments with frequent exposure to aggressive chemicals, ensuring the longevity and safety of the infrastructure. Additionally, the low water absorption, low porosity, and high mechanical strength further enhance their durability and performance in demanding conditions.

Hexagon icon High-Performance Mortars for Enhanced Protection

HEGGEL Mortars are essential for the integrity of tile lining systems. These mortars, including furan, phenol, vinyl ester, polyester and potassium-silicate based variants, offer outstanding resistance to acids, alkalis, and solvents. Their low-porosity and impermeable structure ensure excellent adhesion to substrates, providing an additional layer of protection that is crucial in highly corrosive environments. Integrating **HEGGEL FRP** laminate systems further strengthens this protection by sealing reinforced concrete and recovery basins, effectively preventing corrosive agents from reaching the substrate.





Comprehensive Defence Mechanism of Membranes: Customizable Solutions for Diverse Industrial Needs

The combination of **HEGSEL Tile**, high-performance mortars, when paired with **HEGSEL FRP** systems, which serve as an additional membrane layer, the overall protection is significantly enhanced. **HEGSEL FRP** laminate systems provides a multi-layered defence against corrosion. This system not only prevents the penetration of harmful substances but also absorbs mechanical impacts and distributes stress across different layers. **HEGSEL FRP** Laminate systems, used as membrane layers, seal concrete and other substrates, ensuring that corrosive substances cannot infiltrate and cause damage. They safeguard substrates against chemical penetration, even in the case of cracks in mortars or installed tiles.

This comprehensive approach significantly extends the service life of industrial equipment and infrastructure, making it a cost-effective solution for maintaining industrial facilities.

HEGSEL FRP systems, used as membranes, are subdivided according to their resin base, including Vinyl Ester, Furan, Phenolic, and Epoxy resin systems. The number and type of laminate layers can be tailored to meet specific process conditions.

One of the key advantages of **HEGSEL Tile Lining Systems** is their customizability. This flexibility allows industries to optimize the performance of their corrosion protection systems to suit unique operational environments. By selecting the appropriate combination of mortars, reinforced membranes, and tiles with optimum thickness, **HEGSEL Tile Lining Systems** can be tailored for maximum effectiveness under various chemical and mechanical stress conditions. This adaptability ensures that each installation provides superior protection, enhancing the longevity and reliability of industrial infrastructure across diverse sectors.

