

SAND BRICK VS CLAY BRICK

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INTRODUCTION

Generally, bricks, concrete, steel, glass, and timber are the common building materials that used in building construction. Bricks provide durability and versatility, while concrete provides strength and flexibility. Steel provides structural support and stability, while glass offers transparency and aesthetics. Timber is an adaptable and renewable material. In short, each building material has its own unique characteristics that make it suitable for various construction purposes.

SAND BRICK

Sand bricks are a type of brick that made from sand, lime, and water. Sand brick is made through the process of compressing a mixture of sand, lime, and additives into molds and then cured in an autoclave. The bricks are exposed to high-pressure steam during the autoclaving process, which increase their tensile strength and durability. With such unique properties, sand bricks are commonly used in building construction ^[1].

Sand bricks are necessary for constructing sturdy walls and foundations, whether for residential structures or commercial complexes. They are also adaptable to industrial buildings, enhancing the durability and strength of factories and warehouses. Furthermore, in infrastructure projects such as bridges and tunnels, the use of sand bricks ensures long-lasting durability and structural stability. Their fire-resistant characteristics also boost their attractiveness, rendering them essential in constructing safe and durable buildings. Durability and dependability are key characteristics of sand bricks, which make them essential in many applications in building construction nowadays.

CLAY BRICK

Conversely, the reliable workmanship of clay bricks, established through traditions and known for their timeless appeal, is evident. These bricks are made from natural clay and meticulously burned, and they have been widely used in construction for generations. Their authentic texture and classic red colour lend warmth to any structure ^[2].

Clay bricks are highly adaptable and provide a warm cozy touch atmosphere to the walls of residential buildings. They ensure building structures' resilience and aesthetic appeal by providing a strong foundation. Using these bricks in restoration projects can give old structures a new lease of life while preserving their character. In addition, clay bricks are widely utilized in landscaping projects to build pathways and retaining walls as they combine aesthetics and functionality. Due to its durability, clay brick is a popular choice for various construction applications.

COMPARISON BETWEEN SAND BRICK AND CLAY BRICK

i. Cost

In general, clay bricks tend to be more expensive than sand bricks. Clay bricks are made from natural clay, which requires extensive processing and firing in kilns, making them costlier. On the other hand, sand bricks are made from a mixture of sand and cement, which is a simpler and less expensive manufacturing process. Therefore, sand bricks are often more cost-effective for construction projects than clay bricks.

ii. Resistance to Impact Load

Clay bricks and sand bricks can exhibit similar resistance to impact loads depending on their composition and manufacturing methods. Both types can be engineered to withstand impact effectively, with factors like additives and production techniques playing a role.

iii. **Resistance to Compressive Load**

Clay bricks resist compressive loads better than sand bricks due to their dense and robust structure, which results from high-temperature firing during production. The vitrification process enhances their strength, making them resilient to compressive forces. In contrast, sand bricks, typically less dense, may exhibit comparatively lower resistance to compression. The inherent characteristics of clay bricks make them preferred for applications requiring superior strength and durability in the face of compressive loads.

iv. **Water Absorption**

Clay bricks have a lower water absorption rate than sand bricks. Clay brick is a denser and less porous structure, contributing to reduced water absorption. In contrast, sand bricks may have higher porosity, making them more prone to absorbing water. The lower water absorption rate of clay bricks is a favorable characteristic, particularly in applications where moisture resistance is crucial for the structural integrity and durability of the material.

v. **Thermal Insulation**

Clay bricks generally exhibit superior thermal insulation properties compared to sand bricks. The firing process used in the production of clay bricks results in a denser and less porous structure, contributing to lower thermal conductivity. This denser composition helps minimize heat transfer through the material, making clay bricks more effective at providing thermal insulation.

vi. **Sound Insulation**

Sand brick provides better sound insulation than clay brick. Porosity in sand bricks is pivotal for soundproofing as it influences the material's ability to absorb and dampen sound waves. Bricks with higher porosity, achieved through well-distributed sand particles, enhance acoustic insulation. The greater the porosity, the more effective the material is at soundproofing by dissipating and preventing sound penetration. This porosity minimizes sound transmission, making sand bricks a valuable component in creating structures with improved soundproofing capabilities.

CONCLUSION

In conclusion, sand bricks and clay bricks are comparable in their unique characteristics, but only the most suitable choice for specific construction requirements may be determined. Sand bricks are solid and consistent, while clay bricks have an ancient aesthetic. The choice depends on criteria, including the project's requirements, aesthetics, and budget. By considering the advantages and disadvantages of different bricks, users can choose the suitable brick for the building construction, ensuring a durable and aesthetically pleasing outcome.

Watch our video at <https://youtu.be/1QRGUwNsEI4> to gain insight into the comparison between Sand Brick and Clay Brick.

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References:

[1] Manufacturing of Brick. (2006). <https://www.gobrick.com/media/file/9-manufacturing-of-brick.pdf>

[2] Wood, P. (2017, November 26). Clay bricks are best | Claytile - The Natural Choice. Claytile - the Natural Choice. <https://www.claytile.co.za/benefits-of-clay-bricks/>

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